



**THE UNITED REPUBLIC OF TANZANIA  
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY  
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA**



**STUDENT'S ITEM RESPONSE ANALYSIS REPORT  
ON THE FORM TWO NATIONAL ASSESSMENT  
(FTNA) 2020**

**INFORMATION AND COMPUTER STUDIES**



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**036 INFORMATION AND COMPUTER STUDIES**

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### **List of Abbreviations**

SIRA	–	Students’ Item Response Analysis
FTNA	–	Form Two National Assessment
RAM	–	Random Access Memory
ROM	–	Read Only Memory
UPS	–	Uninterruptable Power Supply
CPU	–	Central Processing Units

## **FOREWORD**

The National Examinations Council of Tanzania is pleased to issue the report on Students' Item Response Analysis (SIRA) in Information and Computer Studies for the Form Two National Assessment (FTNA) 2020. The aim of this report is to inform teachers, parents, students, policy makers and other education stakeholders on how the students responded to the assessment items.

The analysis presented in this report is intended to contribute towards understanding some of the reasons behind the performance of students in the assessment. The report highlights the factors that made the students to answer the questions correctly or incorrectly. The analysis showed that students who performed well provided appropriate responses since they were able to; identify the requirements of the questions, had adequate knowledge of the subject content and good mastery of English Language. The report also highlights the reasons that made some students fail to score high marks. Such factors include failure to identify the demand of the question, inability to express themselves in English Language and lack of knowledge on the concepts which were tested.

The National Examinations Council of Tanzania believes that stakeholders in education will work on the challenges which the students faced while attempting the assessment questions in order to take appropriate measures to improve the performance in this subject.

Finally, the Council would like to thank all the Examination Officers, Examiners and all who participated in the preparation of this report.



Dr. Charles E. Msonde  
**EXECUTIVE SECRETARY**

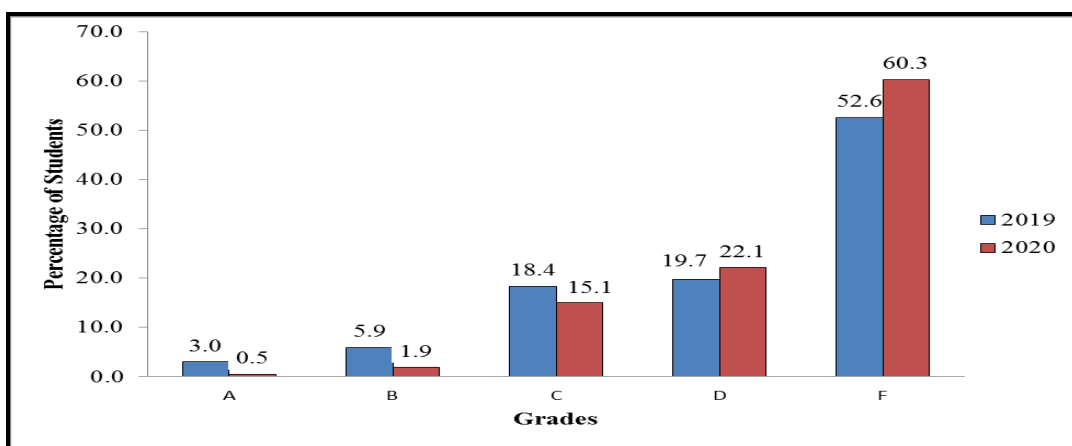
## 1.0 INTRODUCTION

This report analyses students' item response in Form Two National Assessment in Information and Computer Studies subject for the year 2020. The paper was set according to the 2005 Information and Computer Studies syllabus for Ordinary Secondary Education at form two level and the 2017 format.

The examination paper had three sections, A, B and C. Section A consisted of three objective questions which were multiple-choice items, matching items and true/false items. This section carried a total of 20 marks. Section B consisted of six short answer questions which carried a total of 60 marks and section C had an essay question which weighed 20 marks. All questions in all sections were compulsory.

This report provides feedback to our stakeholders on the students' performance; showing both students' strengths and weaknesses. The students' performance in each question/topic has been categorized using the ranges of 0 to 29 (weak performance), 30 to 64 (average performance) and 65 to 100 (good performance). In this report, the students' performance is presented in different colours whereby the red colour stands for weak performance, the yellow colour for average performance and the green colour for good performance.

A total of 14,016 students a set for this paper in November, 2020, of which 5,559 (39.66%) passed the assessment and 8,456 (60.34%) failed. The performance decreased by 7.55 percent when compared to the 2019 performance. In 2019 performance, 13,952 students sat for assessment, of which 6,558 (47.21%) passed and 7,334 (52.79%) failed. Figure 1 shows the comparison of students' performance in 2019 and 2020.



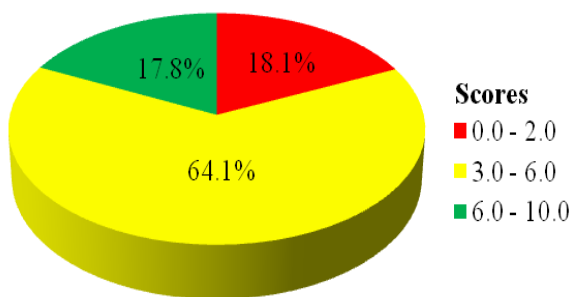
**Figure 1:** A comparison of students pass grades in 2019 and 2020.

## 2.0 ANALYSIS OF THE STUDENTS' PERFORMANCE IN EACH QUESTION

### 2.1 Question 1: Multiple Choice Items

The question consisted of ten (10) multiple choice items which were composed from six topics of the syllabus. The topics were Information, The computer, Computer Software, Word processing, Spreadsheet and The Internet. The students were required to choose the correct answer from the given four alternatives (A – D).

A total of 14,015 (100%) students attempted this question, out of which 2,545 (18.1%) scored from 0 to 2 marks, 8,981 (64.1%) scored from 3 to 6 marks and 2,489 (17.8%) scored from 7 to 10 marks out of 10 marks allocated. Figure 2 shows the student's performance on this question.



**Figure 2:** The students' performance on question 1.

The majority of the students 81.9 percent scored from 3 to 10 marks. This indicates that, many students managed to choose the correct answer in many items. However, a few students 18.1 percent performed weakly. The following is the analysis of students' responses for each item of this question:

Item (i), *what is the main function of a hard disk in the computer system?*

- |                                  |                               |
|----------------------------------|-------------------------------|
| <i>A Store saved information</i> | <i>B Store temporary data</i> |
| <i>C Process data</i>            | <i>D Process information</i>  |

This item tested the students' knowledge on the important of hard disk in the computer system. The correct answer was A, *Store saved information*. The students who managed to opt for the correct answer



Item (ii) Stated that; *given the cells B2, B3, B4 and C1 with values 3, 5, 10 and 13 respectively, what will be the output when the function =COUNT(B2:B4) is applied?*

This item tested students' knowledge on using the "Count" function to retrieve number of cells which contain values. The correct answer was B, "3". The students who scored a zero mark chose other alternatives which were not correct. Most of them selected A "4" by counting all given cells B2, B3, B4 and C1. These students failed to realize that; cell C1 was not included in the COUNT function. This indicates that, students had inadequate knowledge on reading function range. Other students chose option C, "18" by adding values in cells B2, B3 and B4. While others chose option D, "31" by adding all values in cells B2, B3, B4 and C1. This shows that, the students could not differentiate between the function required to count "=COUNT()" and the function required to add values in cells "=SUM()".

<i>A</i> function key	<i>B</i> special key
<i>C</i> caps lock key	<i>D</i> control key

Item (iv) Which of the following device is not an output device?

3

This item tested students' knowledge on recognizing or identifying the output devices. The correct answer was C, "Barcode reader". The students who scored a zero mark chose other options which were not correct. Most of these students failed to understand that, a barcode reader is an example of scanner which was the only input device among the output devices given in the other alternatives.

Item (v) stated that; *what causes a red line wave to appear under text during typing in Microsoft word?*

- A Grammatical error                      B Spelling error  
B Content error                              D Logical error

This item tested students' knowledge on editing word document specifically on error checking. The correct answer was B, "spelling error". Students who scored a zero mark chose other alternatives which were not correct. Most of the students selected A, "Grammatical error" because they mixed up the red line and green line waves displayed on Microsoft word. These students did not know that, green line wave shows a text with grammatical error. Other students who chose C "content error" failed to understand that, both grammatical and spelling error are categorized as content errors of the document. This signifies that, students lacked knowledge on the line wave colours displayed in a word document contains spelling errors.

In item (vi), the students were required to identify the correct function required to calculate the total data given in Figure 1 as follows:

	A	B
1	50	
2	65	
3	75	
4		

Figure 1

- A =SUM(A1,A3)                              B =SUM(A1:A3)  
B =ADD(A1,A3)                              D =SUM(A1 +A3)


The correct response was B, =SUM (A1:A3). The item tested the students ability on identifying the functions used in Microsoft excel program. The students who opted for A, =SUM (A1, A3) had knowledge on the syntax used to write the function but failed to

determine the correct character required in the function. The students were required to understand that functions used in excel includes the character colon (:) and not comma (,) or plus sign (+). The students also were supposed to realize that the function name for calculating the total data is SUM and not ADD.

*Item (vii) required the students to determine the feature of an operating system which is applicable to a multi-tasking operating system. The options given were;*

- A Running many programs at a time.*
- B Many users access a computer at a time.*
- C Running a single program at a time.*
- D One user access a computer at a time.*

This item tested students knowledge on operating systems. The correct responses was A, *Running many programs at a time*. The students who opted for the correct response had adequate knowledge on various types of operating systems and its feature. On the other hand, the students who opted for other incorrect responses had insufficient knowledge on multi-tasking operating system.

Item (viii) stated that; *what is the function of the icon*  *as used in Microsoft word?*

- A Save the document*
- B Paste the document*
- C Format the document*
- D Copy the document*

This item tested students' knowledge on formatting and editing concepts. The correct option was B, "Paste the document". Students who chose other options were incorrect and scored a zero mark. Most of the students chose option D "Copy the document". These students failed to differentiate a copy from a paste formatting feature. Other students who chose C "Format the document" failed to understand that, copy, paste and save icons are formatting features responsible for formatting document while the given icon based only on pasting the text or document.

Item (ix) *which is an example of primary source of information?*

- A *Encyclopedia*                      B *Newspaper*  
C *Diaries*                                D *Dictionaries*

This item tested students knowledge on information dissemination. The correct response was C, “Diaries” because diaries are personal documents written by a person direct from events. Students who chose other options apart from C were incorrect and scored a zero mark. Students were supposed to know that Encyclopedia, Newspaper and Dictionaries are secondary sources of information because they provide information to the audience indirectly. This signifies that, students failed to distinguish primary source from secondary sources of information.

Item (x) was as follows:

*What is the major disadvantage of an electronic mail?*

- A *Not reliable*                      B *Spread computer virus*  
C *Difficult to use*                      D *Very expensive*

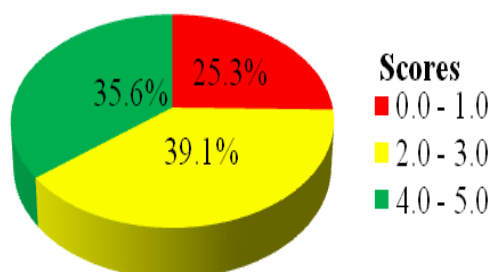
This item tested students’ knowledge on the Internet application. The correct answer was B, *Spread computer virus* because email is among of the ways which spread virus through junk mail. However, other student who opted for A, C and D, had insufficient knowledge on the concepts tested.

## **2.2 Question 2: Word processing**

This question tested students’ knowledge on the use of shortcut keys in a Microsoft word. In this question, the students were required to match the functions of the shortcut keys from the keyboard in List A with their corresponding shortcut keys in List B by writing the letter of the correct response below the number of the corresponding item in the table provided. The question was as follows:

LIST A	LIST B
(i) Key combination which is used to close the current document.	A. Ctrl + O B. Ctrl + Tab
(ii) Key combination which is used to open a saved document.	C. Ctrl + U D. Shift + F7
(iii) Key combination which underlines a selected text.	E. Ctrl + P F. Ctrl + X
(iv) Key combination which is used to print a document.	G. Ctrl + F4 H. Ctrl + A
(v) Key combination which is used to select the whole document at once.	

A total of 13,963 (99.6%) students attempted this question. Out of which, 3,530 (25.3%) scored from 0 to 1 mark, 5,466 (39.1%) scored from 2 to 3 marks and 4,967 (35.6%) scored from 4 to 5 marks out 5 marks allocated. Figure 3 presents the students' performance on this question.



**Figure 3:** *The students' performance on question 2.*

The general performance on this question was good as 74.7 percent of the students scored above 1 mark. The following is the analysis of students' responses for each item of this question:

Item (i) tested the ability of the students to identify key combination required to close the current document. The correct answer was G, “Ctrl + F4”. Most of students who failed to score on this item selected option

F “Ctrl + X”. These students mixed up the function of the icon with letter “x” appeared on the Microsoft word window with the term closing the document. They failed to understand that, “Ctrl + X” is responsible for cutting the text on the document not for closing the current document.

Item (ii) tested the ability of the students to open a saved document. The correct response was A, “Ctrl + O”. Most of the students who failed to choose the correct response select option C “Ctrl +U”. These students did not understand that option C, *underline*. This indicates that students lacked knowledge on key board short cut keys.

Item (iii) tested the ability of the students to underlines a selected text. The correct response was C “Ctrl + U”. The students who failed to choose correct response selected option H “Ctrl +A”. These students did not understand that option H represent *select all*. Other students selected F, “Ctrl +X” which indicates *cut selected text*. This indicates that students lacked knowledge of keyboard short cut keys.

Item (iv) required the students to identify key board short cut used to print a document. The correct response was E, “Ctrl +P”. The students who opted for E had good knowledge on key board short cut. However, a few of them selected option A, “Ctrl +O” and F, “Ctrl +X”. These students misinterpreted the keyboard short cut keys.

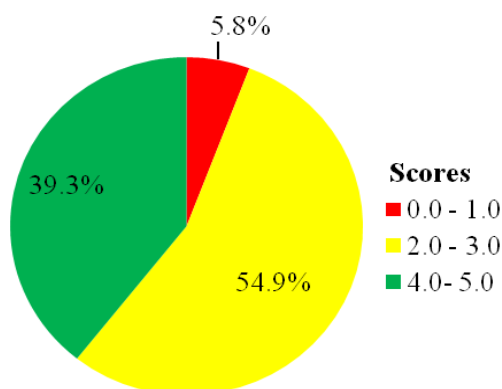
Item (v) required a student to identify key combination used to select the whole document at once. The correct answer was H, “Ctrl + A”. Most of the students who got wrong answer chose D, “Shift + F7”. These students failed to understand that “Shift + F7” is required to open thesaurus for the highlighted text but not for selecting a word document.

### **2.3 Question 3: True/False Items**

This question consisted of five (5) True/False items. The students were asked to write True (for the correct statement) and False (for the wrong statement). The question was composed from 3 topics of the syllabus, which are *The computer*, *Computer evolution* and *Computer Network and Communication*. The following items were given:

- (i) Calculators and mobile phones are examples of computers.
- (ii) Computers are used in offices to create, edit, format and store office documents.
- (iii) The motherboard is an example of a peripheral device.
- (iv) Mesh and ring topology are examples of logical topology.
- (v) Microcomputers are used in schools and hospitals.

The analysis show that, 14,005 (99.9%) students attempted this question, out of which 814 (5.8%) scored from 0 to 1 mark, 7,689 (54.9%) scored from 2 to 3 marks and 5,506 (39.3%) scored from 4 to 5 marks out of 5 marks allocated. Figure 4 shows the performance of the students on this question.



**Figure 4:** *The students' performance on question 3.*

The general performance on this question was good as shown in Figure 4. Only 5.8 percent of the students scored below 2 marks. The students who scored high marks were able to give the correct response in many items. The following is the analysis of students' responses for each item.

Item (i) tested the students' knowledge on identifying different types of computers and their examples. The question required the students to identify calculators and mobile telephone as one of the examples of computers. The correct answer was "True". However, some of the students wrote "False". This response is attributed to the fact that, both calculators and mobile telephones have small sized screen and small keyboard when compared to other computers. Calculators also have a small and fixed storage capacity which could not allow installation of new software. The students failed to understand that, a calculator is a

special purpose computer responsible for calculation as it can input, process and display data.

Item (ii) tested students' knowledge on the uses of computer at the office. The students were required to identify the uses of computer at the office. The correct answer was "True". The students who opted for a correct answer had sufficient knowledge on the uses of computers. The students who chose "False" failed to understand the requirement of the question, for the reason that many office use computer to facilitate their work such as writing letter, storing documents.

Item (iii) tested the students' knowledge on the computer system. The students were required to identify that motherboard is an example of a peripheral device. The correct answer was "False". The students who opted for a correct response had sufficient knowledge on computer system and peripheral devices. The students who choose "True" had insufficient knowledge on peripheral devices. They failed to realize that hardware that is not part of the system unit is called peripheral device(s). For example, mouse, keyboard, microphones, scanner and speaker. Motherboard is not a peripheral device because it is found in a system unit.

Item (iv) tested the students' knowledge on the types of computer network topology. The question required the students to identify whether mesh and ring topology as one among the examples of logical topology. The correct answer was "False". The students who wrote "True" did not realized that, both mesh and ring topology are physical arrangement of components on the network named as physical topology. Logical topology such as Ethernet and Token ring is responsible to map data flow from one device to another in a network.

Item (v) tested students' knowledge on the types of computers and their uses in a society. The question required students to identify the uses of microcomputer in schools and hospitals. The correct answer was "True". The students who wrote "False" were supposed to know that, microcomputer are personal computer such as laptop, desktop and tablets computer. Microcomputers are used by teachers at schools to



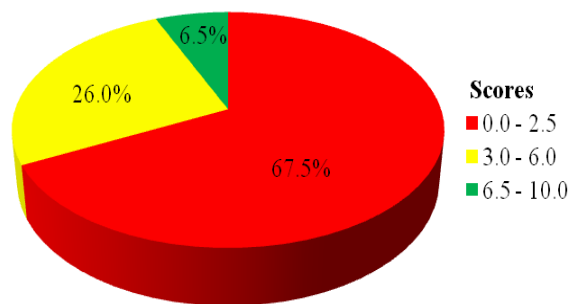
prepare notes, examination and reports. Also, microcomputers are used at hospitals to keep patients records.

## 2.4 Question 4: Computer Software

In this question, students were required to;

- (a) Give two examples and briefly explain the importance of application software as used at schools.
- (b) Explain three hardware criteria to consider when selecting a computer.

The statistics show that, 13,351 (95.3%) students attempted this question, out of which 9,018 (67.5%) scored from 0 to 2.5 marks, 3,471 (26.0%) scored from 3 to 6 marks and 862 (6.5%) scored from 6.5 to 10 marks out of 10 marks allocated. Figure 5 represents the students' performance on this question.



**Figure 5:** The students' performance on question 4.

The general performance on this question was of average because 32.5 percent of the students scored above 2.5 marks. The analysis from the students responses showed that the students (67.5%) who scored low marks, were able to give one correct examples of application software used at schools but failed to explain the importance of application software in part (a), a few of them gave two correct examples without explanation. In part (b), some of the students managed to mention hardware criteria such as warranty, cost and portability without explanations. Other students mentioned computer hardware parts like input, output, processing and storage devices instead of hardware criteria. For example, one of the candidates explained on *printer*, *scanner* and *Central Processing Unit (CPU)*. This shows that, the students did not understand the requirement of the question. A few of them gave examples and explained correctly the importance of

application software in part (a) but failed to explain any hardware criteria required on selecting a computer. Extract 4.1 shows a sample of weak responses from one of the students who attempted this question.

4. (a)	By giving two examples, briefly explain the importance of application software as used at schools.  This is a special kind of software that perform a specific function. for example :- G-mail is an application software that help one to communicate with another person and browser- aque soccer is an application software that enables one in gaming and e.t.c.
(b)	Explain three hardware criteria to consider when selecting a computer. (i) The one that removes quality output either sound or videoe since there some computers which have outpute with no quality. (ii) Which has enough ports in order to insert different peripheral devices for example : USB flash disk, External and others. (iii) Ability to store charge since a computer with no ability to store charge can easily shutdown when the electricity goes off

Extract 4.1: A sample of incorrect answer to question 4

Extract 4.1 shows the response of one of the students who explained the types of application software in general instead of its importance as used at school in part (a). In part (b), a student explained hardware criteria wrongly.

Further analysis shows that 26.0 percent of the students scored average marks. Most of the students were able to give two correct examples of application software with wrong explanation on the importance of application software in part (a). In part (b), most of the students were able to mention hardware criteria but failed to explain the importance of application as applied at schools. Some of them managed to give hardware criteria with the correct explanation in part (b) but failed to attempt part (a). As the result they failed to score all marks allocated.

Furthermore, most of the students 6.5 percent who scored high marks were able to give correct examples of application software and explained correctly the importance of application software in part (a). Some of them gave unclear explanation which led them to lose some marks. In part (b), most of the students managed to explain one or two hardware criteria required on selecting a computer but failed on others. This signifies that, the candidates had partial knowledge on computer hardware. The students who scored full marks gave the correct examples of application software and their explanations in part (a). They also explained correctly three hardware criteria to consider when selecting a computer. Extract 4.2 shows the correct response from one of the students.

<p>4. (a) By giving two examples, briefly explain the importance of application software as used at schools.</p> <p>... Application software used at schools, for example: Microsoft Word (Word processor) and Microsoft Excel (Spreadsheet), are very important as application programs such as Microsoft Excel can be used in storing of student's records at schools and programs such as Microsoft Word can be used in preparing reports, homework, assignments, tests and exams by creating such documents using the word processor.</p> <p>(b) Explain three hardware criteria to consider when selecting a computer.</p> <p>(i) <u>The Cost :-</u> When selecting a computer, the cost of the hardware itself and its accessories should be considered so as to ensure that sufficient and efficient equipment is bought at an affordable cost.</p>	<p>(ii) <u>The Memory Capacity :-</u> Also, when selecting a computer, the capacity of the memory should be considered so as to ensure you obtain a powerful computer for processing depending on your workload. Example: programmers need more RAM.</p> <p>(iii) <u>The Compatibility and Upgradability :-</u> The computer you are going to select must be compatible to your accessories and software but also upgradable to ensure the latest and most efficient operation for your computer.</p>
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Extract 4.2: A sample of correct answer to question 4

The responses of a candidate provided in extract 4.2 shows that the candidate managed to explain the importance of application software as used at schools in part (a). The candidate also, explained correctly hardware criteria to consider when selecting a computer.

## 2.5 Question 5: Word Processing

This question had seven parts (a), (b), (c), (d), (e), (f) and (g). In this question students were required to study the screenshot which appears during printing process as given in Figure 2, and answer the questions followed:

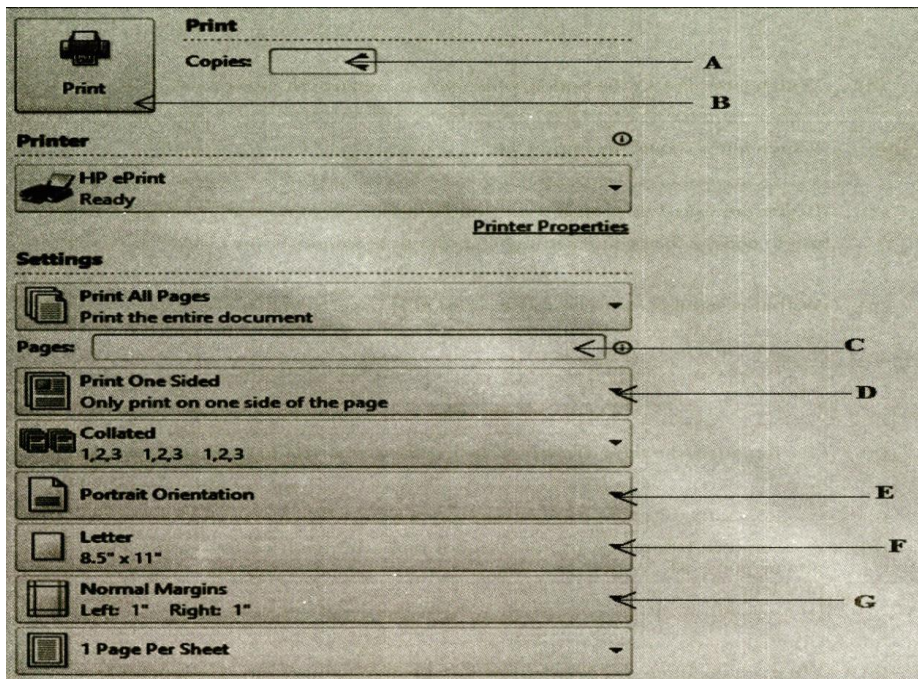


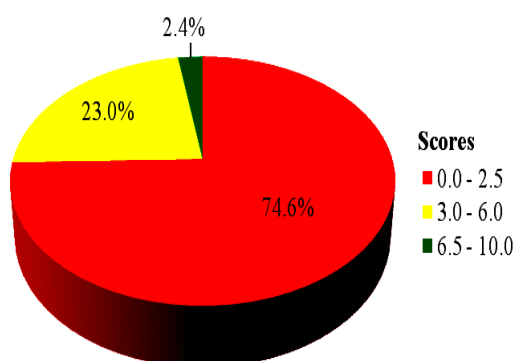
Figure 2

The questions were as follows;

- Which steps would you follow in order to achieve the process in Figure 2?
- What is the name of the printer selected in Figure 2?
- Why do you think the printer selected will print the report?
- Which letter shows the button which you would use to select landscape?
- Which letter shows the button which you would use to set A4 paper?

- (f) If you are asked to print a report on both sides automatically, which letter would you use to change the printer settings in order to accomplish this task?
- (g) With this setting, is it possible to print only page 10? Give one reason.

A total of 13,665 (97.5%) students attempted this question, out of which 10,191 (74.5%) scored from 0 to 2.5 marks, 3,140 (23.0%) scored from 3 to 6 and 334 (2.5%) scored from 6.5 to 10 out of 10 marks allocated. Figure 6 presents the students' performance on this question.



**Figure 6:** The students' performance on question 5.

The general performance on this question was weak because 74.5 percent of the students scored below 3.0 marks. The analysis shows that, most of the students 74.5 percent who scored low marks wrote correctly the first step to achieve printing process but failed to finish other steps in part (a). Some of them wrote the procedures for opening Microsoft word document instead of the steps required to print a report. For example one of the students wrote; *Click start button → Go to all program → Select Microsoft office → Click Microsoft word*. This indicates that, the students did not understand the requirement of the question. In part (b), most of the students wrote types of printers such as laser jet, ink jet and dot matrix instead of writing printer name “HP ePrint” as indicated in the screenshot. In part (c), most of the students gave reason from their own views instead of reading the status of the printer from the screenshot. For example, one of the students wrote *the printer will print because it has paper*. Another student wrote *the printer will print because it has ink*. The students were supposed to

know that, for the printer to print a document it should be in the ready status. This happens when the printer is “ON” otherwise it will not print.

Most of the students were able to write the letter of the button required to select landscape in part (d). They also managed to write the letter required setting A4 paper in part (e) but they failed to write letter required to change the printer setting in part (f). This is attributed to the fact that, the given button for this task was activated as “Print one sided”, so this confused students, hence led them to select letter C, “Print all pages”. This signifies that, the students had insufficient knowledge on the printing process. In part (g), most of the students misinterpreted the term “page 10” with “10 pages”. This led them to state “it is possible to print those pages”. This shows that, the students did not understand the requirement of the question. Extract 5.1 shows a sample of weak responses from one of the students.

5.	<p>(a) Which steps would you follow in order to achieve the process in Figure 2?</p> <p>(i) <u>Switch on a Socket</u></p> <p>(ii) <u>Switch on a ups</u></p> <p>(iii) <u>Go directly to the excel-microsoft office world</u></p> <p>(b) What is the name of the printer selected in Figure 2?</p> <p><u>Printer in Speed Sheet</u></p> <p>(c) Why do you think the printer selected will print the report?</p> <p><u>because when the report it going wrong it might be to select the report in order to print the correct report</u></p> <p>(d) Which letter shows the button which you would use to select landscape?</p> <p><u>letter F</u></p> <p>(e) Which letter shows the button which you would use to set A4 paper?</p> <p><u>letter G letter F</u></p> <p>(f) If you are asked to print a report on both sides automatically, which letter would you use to change the printer settings in order to accomplish this task?</p> <p><u>letter C</u></p>
	<p>(g) With this settings, is it possible to print only page 10? Give one reason.</p> <p><u>because this microsoft world program in printing process it print only one page per sheet</u></p>

Extract 5.1: A sample of incorrect responses to question 5

The response of a candidate provided in extract 5.1 shows that the student failed in part (a), (b), (c), (f) and (g). However, the student managed to write a letter required to select landscape in part (d). Also, the student wrote correctly a letter to set A4 paper in part (e).

Further analysis shows that 23.0 percent of the students scored average marks. Most of them gave at least two correct steps to follow in the printing process in part (a) they also managed to provide correct name of the printer selected for printing in part (b). In part (c), a few of the students gave correct reason for the selected printer to print the report while others could not relate the screenshot with the given question. Thus, they generalized that “printer can print any page”. Otherwise, most of the students managed to write a letter of the button required to select landscape in part (d). They also, wrote correctly a letter for setting a A4 paper in part (e). Some of them named correctly the letter used to change the printer settings for printing the report in both sides automatically in part (f). In part (g), most of the students did not attempt this part. Some of them wrote *it is impossible to print page 10* but did not give the reasons. This indicates that, the students had insufficient knowledge on the printing process.

Most of the students 2.5 percent who scored high marks wrote correctly three steps for printing process in part (a). They also, gave correct name of the printer used as it is indicated from the screenshot in part (b). In part (c), some of the students failed to interpret the given printer status to print document. They wrote answers without linking to what was displayed in the screenshot. For example, one of the student wrote *the selected printer will print the report because it has steps to be followed*. Others commented that, *for the printer to print it should have the paper and connected to the computer*. The students should realize that, in order to print a document the printer should be “On”; this is represented by the ready status from the printing dialog box. Most of the students wrote the correct letter used to select landscape in part (d). The students gave correct letter required to set A4 paper in part (e). They also managed to write a letter required to print a report on both sides. Some of the students stated correctly the possibility of printing page labelled number 10 in a given screenshot but failed to write the correct reason.

This led them to lose some marks. Extract 5.2 presents a sample of the correct response from one of the students.

5. (a) Which steps would you follow in order to achieve the process in Figure 2?

(i) Select File from the menu bar or short

(ii) Then choose the print option

(iii) Select print after the desired settings then select print

(b) What is the name of the printer selected in Figure 2?

HP ePrint

(c) Why do you think the printer selected will print the report?

The printer selected will print the report because it is ready to print but not busy printing documents

(d) Which letter shows the button which you would use to select landscape?

Letter E

(e) Which letter shows the button which you would use to set A4 paper?

Letter F

(f) If you are asked to print a report on both sides automatically, which letter would you use to change the printer settings in order to accomplish this task?

Letter D

(g) With this settings, is it possible to print only page 10? Give one reason.

No, it is not possible to print only page 10 because one of the settings enabled the printing of all the pages.

Extract 5.2: A sample of correct answer to question 5

The responses of a student provided in extract 5.2 shows that the student managed to study the given screenshot and gave the correct answer to part (a), (b), (c), (d), (e), (f) and (g).

## 2.6 Question 6: Computer handling

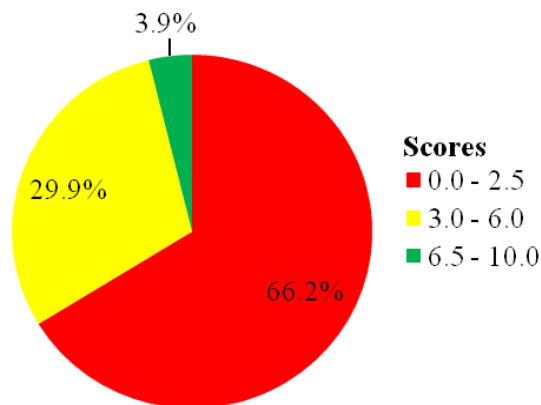
This question consisted of three parts (a), (b) and (c). The students were required to:

- Differentiate the brown-out from blackout as used in computer handling.
- Mention two devices that can be used as a solution to problem of low voltage and power off in a computer laboratory.



- (c) Mention three disadvantages of voltage fluctuation to the computer.

A total of 13,429 (95.8%) students attempted this question, out of which 8,897 (66.2%) scored from 0 to 2.5 marks, 4,011 (29.9%) scored from 3 to 6 and 521 (3.9%) scored from 6.5 to 10 out of 10 marks allocated. Figure 7 represents the students' performance on this question.



**Figure 7:** The students' performance in question 6.

The general performance on this question was average because 33.8 percent of the students scored above 2.5 marks. The analysis showed that 66.2 percent of the students who scored low marks managed to explain the term “blackout” but failed to explain on “brown-out” in part (a). The students made direct translation of the term instead of relating it with computer handling concept. For example, one of the students wrote *brown-out is used to change colour of the computer into brown*. This indicates that, the student was not familiar with the term “brown-out” as applied in computer handling. In part (b), most of the students mentioned *Uninterruptable Power Supply* but failed to mention other devices such as Voltage stabilizer, Voltage generator and Motor generator. Some of them mentioned the computer parts such as CPU, RAM and ROM. This shows that, the students had no idea on the devices used to resolve problem of low voltage and power off. In part (c), some of the students wrote only one correct disadvantage of voltage fluctuation to the computer. Other students mentioned the general effects of voltage fluctuation which are not specific to the computer.

For example, one of the students wrote *it can cause disturbance to the user*. This indicated that, the students did not understand the requirement of the question. Extract 6.1 shows one of the incorrect response from one of the students.

6. (a)	Differentiate the term brown-out from blackout as used in computer handling. brown-out → coming computer and its accessories in brown colour black-out → coming computer and its accessories in black colour
(b)	A computer laboratory in your school has a problem of low voltage and sometimes power goes off. Which two devices would you recommend to be a solution to this problem?
(i)	(UPS) uninterruptable power supply
(ii)	voltage fluctuation
(c)	What are the three disadvantage of voltage fluctuation to the computer?
(i)	Will Avoid electric short
(ii)	Avoid over heating in a computer
(iii)	Avoid low of power in a computer better better

Extract 6.1: A sample of incorrect answer to question 6

In extract 6.1, the student failed to differentiate brown-out from blackout by giving wrong explanation to each term in part (a). In part (b), the student mentioned correctly only one device required to solve a problem of low voltage. Also, the student wrote wrong disadvantages of voltage fluctuation to the computer in part (c).

On the other hand, most of the students 29.9 percent who scored average marks were able to differentiate brown-out from blackout in part (a). In part (b), some of the students managed to mention the devices which could be used to solve the problem of low voltages and power off. However, few of them mentioned electrical devices such as voltmeter, ammeter and circuit breaker. This implies that, the students did not understand the requirement of the question. In part (c), most of the student wrote correct disadvantages of voltage fluctuation to the computer. However, some of them mentioned only two disadvantages. While others were repeated the same points in different words. For example, one of the students wrote *Computer will slow down in performing its task* and *Computer will not function well*. These two

points implies the same meaning which is dropping efficiency of the computer.

Further analysis shows that, most of the students 3.9 percent who scored high marks gave the correct answer in many parts. A few of them had a problem in responding to part (a) especially in explaining the term brown-out. This led them to lose some marks. Extract 6.2 shows a sample of a correct response from one of the students.

6. (a)	Differentiate the term brown-out from blackout as used in computer handling.
	<u>Blackout is the complete loss of AC power. While Brown out-Reduced voltage level of AC power that lasts for a period of time and the voltage is below 80 percent of the normal voltage.</u>
(b)	A computer laboratory in your school has a problem of low voltage and sometimes power goes off. Which two devices would you recommend to be a solution to this problem?
(i)	<u>Voltage stabilizer.</u>
(ii)	<u>Uninterruptible Power Supply (UPS).</u>
(c)	What are the three disadvantage of voltage fluctuation to the computer?
(i)	<u>Loss of data you were working on.</u>
(ii)	<u>The computer system may not boot.</u>
(iii)	<u>The internal power supply may burn out.</u>

**Extract 6.2:** A sample of correct answer to question 6

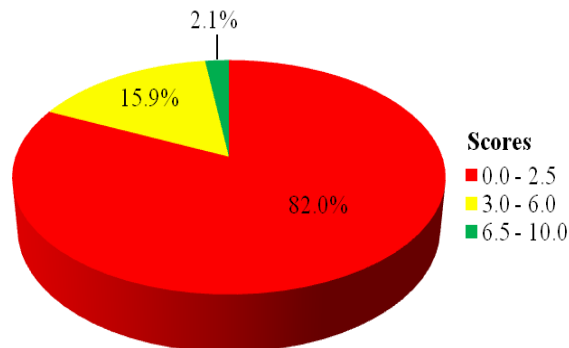
In extract 6.2, the student gave the differences of the two terms. Also, stated the problem of low voltage of power cuts and gave disadvantages of voltage fluctuation.

## 2.7 Question 7: Computer networking and communication

The question had two parts (a) and (b). In this question the students were required to:

- (a) Outline four advantages of star topology.
- (b) Describe four considerations when choosing a network topology.

A total of 13,285 (94.8%) students attempted this question, out of which 10,891 (82.0%) scored from 0 to 2.5 marks, 2,118 (15.9%) scored from 3 to 6 and 278 (2.1%) scored from 6.5 to 10 out of 10 marks allocated. Figure 8 illustrate the students' performance in this question.



**Figure 8:** *The students' performance on question 7.*

The general performance on this question was weak because 82.0 percent of the students scored below 3.0 marks. The analysis showed that, the majority of the students 82.0 percent who scored low marks outlined correctly one advantage of star topology but failed to give other three advantages in part (a). Some of the students wrote application of computer network instead of advantage of star topology. This shows a knowledge gap of students on the advantages of star topology. Others wrote the disadvantages instead of advantages of star topology. For example, one of students wrote; *Star topology is expensive*. This signifies that, the students failed to understand the requirement of the question. In part (b), most of the students failed to describe four considerations of choosing a network topology. Some wrote correctly only one or two considerations in choosing a network topology. Other students explained the types of topologies such as Bus, Ring, Star and Mesh topology. This shows that, the students did not understand the requirement of the questions. Extract 7.1 shows a sample of a weak response provided by one of the students.

7. (a) Outline four advantages of star topology.
- (i) Computer share information easily because the main source of information is the hub.
  - (ii) It is Accurate. Star topology is accurate because it send the correct information in all computers.
  - (iii) It is fast. Star topology is very fast to pass information from one computer to another because they are few.
  - (iv) High storage capacity. Star topology can store alot of informations and files in it.
- (b) Briefly describe four considerations when choosing a network topology.
- (i) Source of information - In order to know what it needs to share information eg hub.
  - (ii) Distance it covers - In order to know how far it can work.
  - (iii) It's speed - In order to know how long it takes for it to get information.
  - (iv) Price - In order to know the cost of the devices.

Extract 7.1: A sample of incorrect answer to question 7

Extract 7.1 shows the response from one of the students who mentioned some characteristics of star topology instead of advantages of star topology in part (a). In part (b), the student described two considerations correctly and failed to describe the considerations to choose a network topology.

Further analysis showed that 15.9 percent of the students scored average marks. Most of the students were able to give at least one advantage of star topology in part (a). Some of them wrote advantages of networking instead of star topology. In part (b), the students wrote not more than two correct considerations for choosing a network topology. Some of the students repeated points using different words. For example, one of the students wrote; *you should have to know the area if it is large or small and choose appropriate topology due to the area coverage*. Others described network device such as hub, switch, router and repeater. This signifies that, the students did not understand the requirement of the questions.

Furthermore, 2.1 percent of the students who scored high marks managed to outline at least three advantages of star topology in part (a). In part (b), the students described correctly at least two considerations for choosing a network topology. Extract 7.2 shows a sample of correct response from one of the students.

7. (a) Outline four advantages of star topology.
- (i) Reduces traffic due to that every computer has its own cable connected to ~~one~~ one hub.
  - (ii) Can easily detect trouble shooting due to that every computer has its own cable.
  - (iii) If one computer fails to function, others continue due to each computer is connected to a hub.
  - (iv) Has high speed, accuracy and efficiency due to that there is no traffic.
- (b) Briefly describe four considerations when choosing a network topology.
- (i) Numbers of the computer users / Number of multiusers
  - (ii) Computer efficiency and accuracy
  - (iii) Multifunctions needed to be performed.
  - (iv) Users capital and knowledge of handling management.

Extract 7.2: A sample of correct answer to question 7

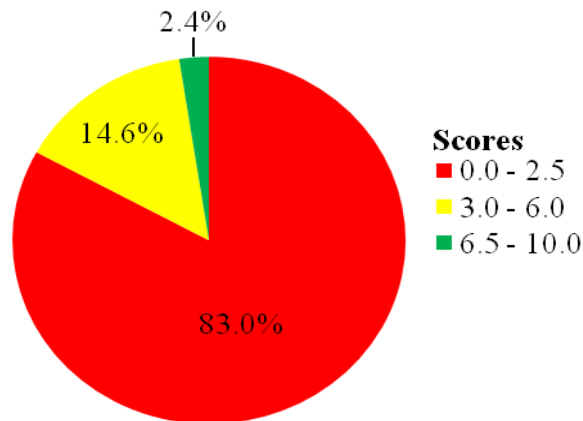
Extract 7.2 showed a response of a student who outlined correctly the advantages of star topology. The student also, described correctly the considerations on choosing a network topology.

## 2.8 Question 8: Spreadsheet

This question had three parts (a), (b) and (c). In this question, the students were required to:

- (a) Differentiate workbook from worksheet.
- (b) Describe two types of cell referencing. Giving one example for each.
- (c) List four procedures required to rename a worksheet called sheet 3 to maths.

A total of 13,209 (94.2%) students attempted this question, out of which 10,960 (83.0%) scored from 0 to 2.5 marks, 1,928 (14.6%) scored from 3 to 6 and 321 (2.4%) scored from 6.5 to 10 out of 10 marks allocated. Figure 9 presents the students' performance on this question.



**Figure 9:** *The students' performance on question 8.*

The general performance on this question was weak because 83.0 percent of the students scored below 3.0 marks. The analysis showed that, the majority of the students 83.0 percent who scored low marks were able to explain either workbook or worksheet but not both, in part (a). This shows that, the students had partial understanding on spreadsheet. Some of the students gave direct translation of the terms workbook and worksheet. For example, one of students wrote; *Workbook is the work which done in the book while Worksheet is work which done in the pieces of paper*. This shows that, the students had insufficient knowledge in a spreadsheet. In part (b), most of the students failed to describe two types of cell referencing. Some of them were able to give example of relative cell referencing but failed to describe it.

Others wrote examples of function such as SUM() and AVERAGE() instead of cell referencing. Few students listed correctly two types of cell referencing but failed to give examples. For example, one of the students wrote “\$B5” as an example of relative cell referencing. The students failed to realize that, relative cell referencing does not contain dollar sign. In part (c), some of the students managed to write the procedures required to rename a worksheet but failed to arrange them in a order. Extract 8.1 shows a sample of a weak response provided by one of the students.

8. (a) Differentiate workbook from worksheet.

Work book - is a page which is  
 combine one page to more page or sheet.  
 while worksheet is a used by  
 one sheet

(b) Describe two types of cell referencing. Give one example for each.

(i) Column - is a line which is a  
 horizontal not period or other  
 line in the computer

(ii) Rows is a line which show  
 the not horizontal like a  
 column in the computer shows.

(c) List four procedures required to rename a worksheet called sheet3 to Maths.

(i) Micro processor

(ii) Vp planner

(iii) fibex sheet

(iv) bar sheet

Extract 8.1: A sample of incorrect answer to question 8

In extract 8.1, the student failed to differentiate workbook and worksheet in part (a). In part (b), the student wrote parts of the worksheet instead of types of cell referencing. The student also, could not manage to list procedures to rename a worksheet in part (c).

On the other hand, 14.7 percent of the students who performed average marks gave correct difference of workbook and worksheet in part (a). Some of the students interchanged the meaning of workbook and worksheet. For example, one student wrote *Workbook is the working area consisting of rows and column while Worksheet is the collection of more than one sheets*. This shows that the students had insufficient knowledge on the spreadsheet. In part (b), most of the students managed to write two cell referencing with their examples but failed to describe them. Others managed to give example of relative cell referencing but failed to write example of absolute cell referencing. In part (c), most of the students managed to write two procedures for renaming a worksheet but failed to finish other two procedures.



Moreover, very few 2.4 percent of the students who performed well managed to differentiate workbook from worksheet in part (a). They also described correctly two types of cell referencing in part (b) that is absolute cell referencing and relative cell referencing. Although, some of them exchanged example of mixed cell referencing and absolute cell referencing this led them not to score full marks. This showed that, student had partial understanding of cell referencing. In part (c), most of the students managed to write all procedures required to rename worksheet3. Some of them started with “Open Microsoft excel” instead of “Right clicking on the sheet”. This led them to loose some marks. Extract 8.2 shows a sample of a correct response which was provided by one of the student.

8. (a)	Differentiate workbook from worksheet. <u>A workbook is a combination of more than one worksheets / spreadsheets in a spreadsheet program like excel but</u> <u>a worksheet is the area in which data is entered</u> <u>in a spreadsheet program. by default a workbook contains 3 worksheets</u>
(b)	Describe two types of cell referencing. Give one example for each.
(i)	<u>Relative cell reference:</u> This is the type of cell reference that changes with change in position of the chosen cell. Example is cell reference A4 because it can change into B4, C4, X3 and etc.
(ii)	<u>Absolute cell reference:</u> This is the type of cell reference that remains the same and does not change with change in the chosen cell. It is represented by "\$". Example is \$A\$4 will remain as \$A\$4
(c)	List four procedures required to rename a worksheet called sheet3 to Maths.
(i)	<u>Right click on the "Sheet3" icon</u>
(ii)	<u>Choose the rename option</u>
(iii)	<u>Type in "Maths"</u>
(iv)	<u>Once satisfied press enter to confirm the change.</u>

Extract 8.2: A sample of correct answer to question 8

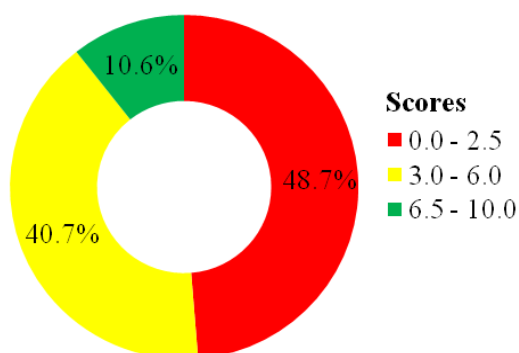
Extract 8.2 shows a response of a candidate who gave correct difference in part (a) and wrote correctly two types of cell referencing in part (b). Also, the student managed to write correct steps required to rename a worksheet.

## 2.9 Question 9: The Internet

The question consisted of two parts (a) and (b). The students were required to:

- (a) Explain one negative effect of internet on cultural changes.
- (b) Briefly explain four advantages of electronic mail (e-mail).

A total of 13,270 (94.7%) students attempted this question, out of which 6,465 (48.7%) scored from 0 to 2.5 marks, 5,396 (40.7%) scored from 3 to 6 and 1,409 (10.6%) scored from 6.5 to 10 out of 10 marks allocated. Figure 10 presents the students' performance in this question.



**Figure 10:** The students' performance on question 9.

The general performance on this question was average because 51.3 percent of the students scored above 2.5 marks. The analysis showed that, most of the students 48.7 percent who scored low marks managed to write a negative effect of internet on cultural changes but they failed to explain them in part (a). For example, one of the students wrote; *Increase in criminal cases by use of Internet, thieves are able to use the electronic devices to steal*. The student could not explain how thieves could use the devices to steal. In part (b), most of the students failed to write the advantages of electronic mail. Some of them wrote the advantages of search engine instead of advantages of electronic mail. For example, one of the students wrote; *It helps students to download materials for their studies*. The student failed to understand that, in order to download material user needs a search engine and not electronic mail. Others mentioned only one advantage but failed to explain them. This signifies that, the students had partial understanding on electronic mail. Furthermore, some students in this category wrote

the disadvantages of electronic mail instead of the advantages. For example, one student wrote; *It is expensive*. This indicates that, the students did not understand the requirements of the question. Extract 9.1 shows a sample of incorrect responses provided by one of the students.

9. (a)	Explain one negative effect of internet on cultural changes.
	because if people is see the clothes of other country they is like so our culture is not go in other culture. is change to other culture.
(b)	Briefly explain four advantages of electronic mail (e-mail).
(i)	it help in communication in other place.
(ii)	It help to liverytize the business.
(iii)	It help to downloading othe Source.
(iv)	It help to find the friend.

Extract 9.1: A sample of incorrect answer to question 9

Extract 9.1 shows the response of a students who failed to explain the effect of internet on cultural changes. The students also mentioned the advantages of internet instead of electronic mail (e-mail).

Furthermore, most of the students 40.7 percent who scored average marks were able to explain negative effect of internet on cultural changes in part (a). Some of them mentioned correctly four advantages of electronic mail in part (b) but failed to explain them. Others explained correctly only one or two advantages. This shows that, the students had partial understanding on advantages of electronic mail (e-mail).

On the other hand, a few students 10.6 percent who scored high marks were able to explain negative effect of internet on cultural changes in part (a). They managed to explain advantages of electronic mail (e-mail) in part (b). However, other students did not provide clear explanation on some advantages. For example, one of the students

wrote *Simple and easy to use* but this explanations reflected on the speed of internet instead electronic mail. This shows that, the students had inadequate knowledge of electronic mail. Extract 9.2 shows a sample of a correct response from one of the students.

9. (a) Explain one negative effect of internet on cultural changes.  
 1. Access to uncensored and violent content: The internet contains websites with alot of uncensored and violent material like pornography, violent videos and games, that content destroys people's minds and will eventually lead to negatively affecting culture.
- (b) Briefly explain four advantages of electronic mail (e-mail).  
 (i) Electronic mail is fast: Transferring messages through e-mail is really fast, in the sense that a recipient can get the message almost immediately.  
 (ii) E-mail is reliable: You can rely on e-mail for messages since messages are guaranteed to reach the receiver at any time.  
 (iii) E-mail is cheap: Using e-mail does not require many expenses like stamps and envelopes, you just need a device and internet connection.  
 (iv) E-mail can send attachments <sup>that is</sup> it is flexible: E-mail is not only confined to text messages, you can also send attachments like documents and pictures.

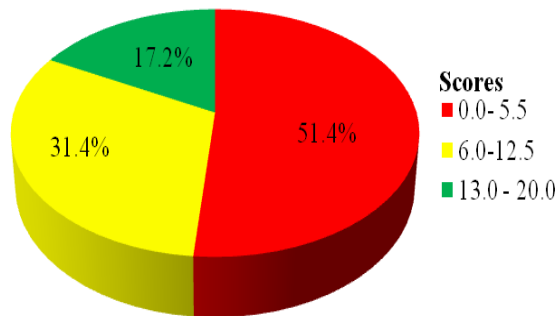
Extract 9.2: A sample of correct answer to question 9

Extract 9.2 shows a response from one of the students who explained correctly a negative effect of internet on cultural changes in part (a). The student also managed to write four advantages of electronic mail.

## 2.10 Question 10: The Computer

This was an essay question which required the students to explain five ways of preventing computer virus.

A total of 12,719 (90.7%) students attempted the question, where 6,543 (51.4%) scored from 0 to 5.5 marks, 3,988 (31.4%) scored from 6 to 12.5 marks and 2,188 (17.2%) scored from 13 to 20 marks out of 20 marks allocated. The general performance on this question was of average because 48.6 percent of the students scored above 5.5 marks. Figure 11 shows the performance of students on this question.



**Figure 11:** The students' performance on question 10.

The analysis showed that 51.4 percent of the students who scored low marks managed to give the meaning of the computer virus but failed to explain the ways to prevent them. Some of the students focused on explaining ways of handling hardware parts of the computer instead of ways to prevent computer virus. Others explained computer laboratory rules such as connect the computer to UPS, keep away water from computer and avoid dust from entering the computer. This indicates that, the students did not understand the question in terms of demand. Moreover, some of the students were poor in English language which led them to fail to give clear explanations although they mentioned some points correctly. Extract 10.1 shows a sample of answer from one of the students who responded incorrectly.

10. Explain five ways of preventing computer virus.

ESSAY ABOUT THE WAYS OF PREVENTING  
COMPUTER VIRUS

Computer virus is an upset which affect the operations of the computer while a virus is unwanted material which can cause damage to a computer. Computer virus has affected many computers all over the world through spoiling and causing damage to our computers and due to that our computers get spoilt. Computer virus has led to some people using their money through ~~wasting~~ wasting it, so, so as to remove a virus from a computer it required a lot of money so as to may your computer safe. The following are the ways of preventing

computer virus in a computer.

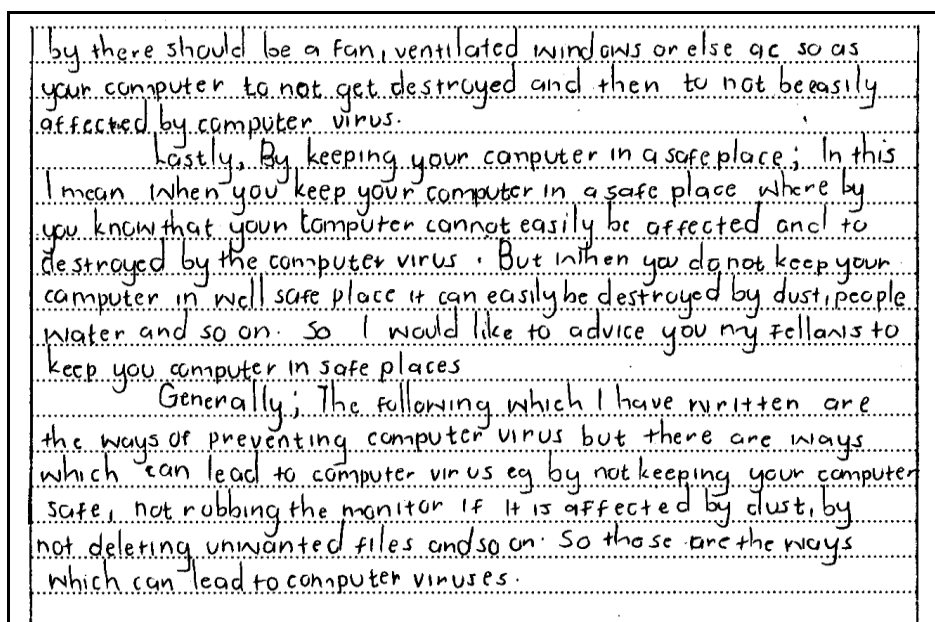
Through switch ~~ing~~ and off your computer properly; In this I mean when you switch your computer without following the steps of switching in and off your computer a computer virus can easily affect your computer. So that why we are advised to switch on and off carefully or else if you are not ~~care~~ carefully you are supposed to follow the ~~procedures~~ procedures.

Secondly, By deleting unwanted things and files; In this I mean when you keep many files and things in your computer your computer can easily get damaged and later on can be easily be affected by the computer. So I advise you my fellow members to never keep many unwanted things in the computer cause your computer will easily be affected.

To continue with, By cleaning your computer and keep it safe from dust; When you do not keep your computer safe from dust due to that dust which has stayed to that computer without cleaning it that dust can easily damage the monitor and other parts of a computer where by it will lead to affection of the computer virus.

By keeping your computer away from water; Water has also led to damaging of our computer and even creation of the computer virus. In this I mean that when water is being poured on your computer when that water is left for a long period of time without being rubbed it can easily create a virus in your computer. So I advise you to keep far away your computer from ~~water~~ water.

Last but not least, By keeping your computer in well ventilated areas; Your computer should not be kept in hot areas cause when you keep your computer in hot areas it will easily get damage and then affected ~~th~~ by the virus. So we must keep our computers in well ventilated areas where



Extract 10.1: A sample of incorrect answer to question 10

Extract 10.1 shows a response of a student who explained measures for protecting computer from the damage instead of ways of preventing computer from virus. The students also wrote an irrelevant introduction and conclusion.

On the other hand, most of the students 31.4 percent who scored average marks managed to give relevant introduction on ways to prevent virus but failed to explain some of the ways and wrote a poor conclusion. Some of them focused only on defining computer as introduction without explaining how it is infected by virus. This led them to lose some marks. Others wrote correct introduction and conclusion but failed to explain the ways for preventing computer viruses. For example, one of the points given for preventing computer virus was *avoiding playing games*. The student failed to know that playing games is not a way of preventing computer virus but avoiding downloading online games. It was observed that, some students listed the ways of preventing computer virus without explaining them.

Furthermore, most of the students 17.2 percent who scored high marks wrote relevant introduction, explanations and conclusion. Some of the students failed to write relevant conclusion as required. This shows that, the students had inadequate knowledge on computer handling. Extract

10.2 presents one of the correct response provided by one of the students.

10. Explain five ways of preventing computer virus.

Virus is a program which attacks a program without the knowledge of the user. There are so many types of virus which are Trojan horse and worms, where the trojan horse like the legitimate program and worms, they replicate on the program. The following are the ways of preventing them;

Installing an anti-virus program, This anti-virus program helps the computer to be fast in processing its data, where all the virus which have entered the computer are scanned to be removed and detected in the computer.

Avoid opening spam mails, This occurs when a person send a spam mail, he or she is likely to know the other person on what he or she is doing. So the other person should not open a spam mail. It sometimes contain some of spyware program or sending some virus.

Avoid entering unknown devices to computer, like the Flash disk, which can be spoiled which can damage the computer software, so the unknown devices should be scanned well to avoid the virus from damaging the computer.

Avoid installing unknown applications, The unknown application or restricted application may affect your device from operating well due to the upload of the unknown applications, this application may contain some viruses which can not be detected easily.

Avoid opening unknown sources, The unknown sources are like the online ads which contain the trojan horse which attack the computer make it function slowly, some website provide some ads which seem nice but they are dangerous to the electronic devices.

In conclusion, A virus is a program that attacks a program without the knowledge of the user, where, safety measures should be followed to avoid virus on a computer as mentioned above, Also regular backups prevent the loss of data in a computer.

Extract 10.2: A sample of correct answer to question 10



Extract 10.2 shows the response from a student who managed to explain the ways for preventing viruses. Also, a student was able to write relevant introduction and conclusion on computer viruses.

### **3.0 PERFORMANCE OF STUDENTS IN EACH TOPIC**

The Information and Computer Studies Assessment had 10 questions that were set from 9 topics. The analysis of the performance shows that multiple choices and True/False questions had good performance. Multiple choice items were composed from the topics of *Information*, *The computer*, *Computer Software*, *Word processing*, *Spreadsheet* and *The Internet*. The True/False questions were set from the topics of *The computer*, *Computer evolution* and *Computer Network and Communication*. The good performance in the stated topics was attributed to the fact that these types of questions did not require the students to write much. Rather the students identified the answer by either choosing or stating whether the statement was correct or incorrect. Thus, other factors that could lead to inability to respond such as language barriers were eliminated.

On the other hand, the five (5) topics, namely *Word processing*, *Computer Software*, *Computer handling*, *The Internet* and *The computer*, that were tested in question 2, 4, 5, 6, 9 and 10 had an average performance. However, the performance of students was weak in two topics, *Spreadsheet* and *Computer Network and Communication*. Weak performance was attributed to insufficient knowledge and skills of the concept taught under the stated topics, wrong interpretation of the requirement of the question, poor English Language status and lack of practical skills. The performance of students in different topics is summarized in the attached *Appendix*.

### **4.0 CONCLUSION**

In this examination the majority of the students attempted most of the questions correctly. The analysis of the students' performance on each question shows that the students' performance in this Paper was good in questions 1, 2 and 3 while it was of average in questions 4, 6, 9 and 10. On the other hand, it was weak in questions 5, 7 and 8.

The analysis on the 9 topics which were examined shows that 2 topics had good performance, 5 topics had average performance and 2 topics had weak performance. Therefore, the overall performance in Information and Computer Studies Examination in 2020 was of average. The reasons for the

average performance include insufficient knowledge and skills in the examined concepts. Moreover, it was due to the students' ability to recall, explain, and make analysis in answering the questions.

## **5.0 RECOMMENDATIONS**

In order to improve the students' performance in the Information and Computer Studies subject on the topics of Spreadsheet and Computer Network and Communication, the following measures are recommended:

- (a) Teachers have to lead students through practical work on formatting features of spreadsheet.
- (b) Teachers have to lead students on the uses of formula and predefined functions of spreadsheet.
- (c) Teachers are to guide the students through questions and answer session on physical network topologies.
- (d) Teachers should encourage students to discuss the advantages and disadvantages of the topologies.
- (e) The students should read the examination instructions and questions carefully so as to understand clearly the requirements of the questions before attempting them.

## APPENDIX

### Analysis of Students Performance per Topic

S/N	Topic	Number of Questions	Percentage of Students who Scored 30 % Marks or Above	Remarks
1.	Computer evolution, The computer and Introduction to computer network.	1	94.2	Good
2.	Information, The computer, Computer Software, Word processing, Spreadsheet and the Internet.	1	81.9	Good
3.	The Internet	1	51.3	Average
4.	Word processing	2	50.1	Average
5.	The Computer	1	48.6	Average
6.	Computer handling	1	33.8	Average
7.	Computer Software	1	32.5	Average
8.	Computer Network and Communication	1	18.0	Weak
9.	Spreadsheet	1	17.1	Weak

